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UNITED STATES DEPARTMENT OF AGRICULTURE

MISCELLANEOUS PUBLICATION No. 289

Washington, D. C.

November 1937

UTILITY OF JACK RABBIT AND COTTON- TAIL SKINS

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INTRODUCTION

In the sections of the Midwest most densely populated by jack rabbits, sporadic drives have long been made in endeavors to keep these rodents under control. As a byproduct of control the skins have frequently been saved, and in some years thousands of pounds have found their way to the fur markets. There most of the skins have been bought for use as hatters' fur and a few of the best for trimming in the fur trade. The market for jack rabbit skins has been unstable, the prices depending upon the relative prices of skins of other rabbits, and some dealers have lost fortunes handling these skins. Though it has been known that such skins have a use and are salable at some price, there has been no definite record of the relative values of skins of black-tailed and white-tailed jack rabbits and of cottontails from various sections of the country.

SOURCE OF MATERIAL

An opportunity for a study of relative values of such skins arose when the Middle West shelterbelt project was undertaken. Jack rabbits and other rodents became a real problem in the preservation of the millions of newly planted young trees. Field agents of the Biological Survey's Section of Predator and Rodent Control were assigned to various sections of the shelterbelt to supervise rodent-control measures. Arrangements later were made for field agents¹ in North Dakota, Nebraska, and Oklahoma to collect six skins of each sex of whitetails, blacktails, and cottontails every 21 days.

¹ Much credit for completing this collection of skins is due to Harold Haecker, district agent, Division of Game Management, and his associates.

Cottontail skins were collected from all three States, but black-tailed jack rabbits do not occur in North Dakota, nor whitetails in Oklahoma. The skins, devoid of head, were carefully dried, flesh side out, and forwarded to the Biological Survey's Section of Fur Resources, where each was perforated with an individual identification number and where a description of the flesh side and of the fur of each was recorded. The total number of skins collected from October 26 to March 17 was 426, distributed by kind, sex, and State as shown in table 1.

TABLE 1.—*Wild-rabbit skins collected from the shelterbelt area for study of possible commercial value*

State	Jack rabbit skins				Cottontail skins	
	Whitetail		Blacktail			
	Male	Female	Male	Female	Male	Female
North Dakota (east-central).....	<i>Number</i> 40	<i>Number</i> 40	<i>Number</i> 32	<i>Number</i> 25	<i>Number</i> 28	<i>Number</i> 30
Nebraska (north-central).....	38	22	32	25	26	29
Oklahoma.....			29	29	31	27
Total.....	78	62	61	54	85	86

RAW WHITETAIL SKINS

Skins of whitetails taken in east-central North Dakota during the first part of November were fully and densely furred, but the flesh side showed decidedly blue unprime streaks along the sides, as also did occasional skins taken in December. The white outer appearance of the fur did not develop completely until the last of January, when the fur was dense and full. The top part of the underfur had a yellowish-brown appearance throughout the entire period. The belly of all skins was quite papery at all times and easily torn. The upper sides and back showed fair strength and toughness. It took 3.5 of these cured skins to weigh 1 pound.

Skins of whitetails taken in central Nebraska, though of the same species as those taken in North Dakota, showed different characteristics. The fur was shorter, somewhat coarser, and not so dense. Its general color was a brownish tan, except on the rump, which in prime season took on a grayish appearance. The flesh side was decidedly more unprime in the early season, and consistently full prime skins were not found until the first of February. Though the belly of all skins was also thin and papery, the back and sides seemed to be tougher, which made them more desirable than the North Dakota whitetails for use in the fur trade. Four of these cured skins weighed 1 pound.

RAW BLACKTAIL SKINS

The black-tailed jack rabbit skins from central Nebraska were somewhat more thinly furred and lighter in weight than those of the whitetails from the same section. It took 5.8 of these skins to weigh 1 pound. The entire skin was thin and papery. The fact that the back of the blacktail skins was but little tougher than the belly of the whitetails made them unsuitable for fur purposes. There was practically no difference between blacktails from Oklahoma and Nebraska.

RAW COTTONTAIL SKINS

The cottontail skins were thin, papery, and easily torn. The flesh side did not acquire a white, creamy, prime appearance, and the fur was flat, thin, and harsh. There seemed to be a preponderance of guard hairs. Small size alone would preclude their being considered for furriers' purposes. It took 9.3 North Dakota cottontail skins to weigh 1 pound and 10.5 Oklahoma skins.

APPRAISALS BY FUR-TRADE EXPERTS

All the rabbitskins collected before February 15 were inspected by several dealers in raw skins. It was the general consensus that these skins would have little value in the fur trade but that the jack rabbit skins could be readily used as hatters' fur, the skins of whitetails being the more valuable for this purpose, primarily because of their higher yield of usable cut fur.

The dealers stated also that the belly of whitetail skins from North Dakota and Canada, known as "hares" in the fur trade, have been used to a limited extent to imitate white fox. This use requires that the skin be split down the back instead of down the belly.

During the year 1936, however, the skins of blacktails, though selling for less than those of whitetails, were relatively high in price because of the existing demand for dark-colored hats, for which the blue-gray underfur of the blacktails was quite suitable.

The cottontail skins were deemed useless for hatters' purposes, not only because of their tender, papery condition and thin fur but also because their small size would increase the cost of handling.

SELECTED SKINS DRESSED

An experienced dealer in rabbitskins selected six of the best skins of whitetails of both sexes from North Dakota and six from Nebraska and six of blacktails from Nebraska for dressing and possible shearing and dyeing. Skins having gunshot holes were discarded because of a tendency to tear at the holes and because the fur becomes matted in them. No cottontail skins were included.

All 18 skins, because of their thinness and tenderness, were dressed without fleshing and shaving, which is known in the fur trade as being "half dressed." No unusual care was exercised in the dressing. Details regarding each skin, including condition and final disposition, are given in table 2. One of the whitetail skins from North Dakota and one from Nebraska and four of the six blacktails from Nebraska were torn in the dressing operation, some of them so badly as to make it again evident that the blacktails are unsuited for furriers' purposes.

In the natural dressed state the North Dakota whitetails, even though more densely and heavily furred, were rated undesirable for use as furriers' skins because of a tendency to mat due to wavy fiber, irregular uneven appearance—partly due to differences in belly and back regions—and objectionable undercolor. The belly might be used as trimming in imitating white fox if relative prices would make such use profitable.

The Nebraska whitetails were appraised as having greater uniformity and evenness, a stronger fiber, and better wearing qualities, though having less dense fur than the North Dakota whitetails. The color was not desirable.

TABLE 2.—Disposition of 18 selected and "half dressed" jack rabbit skins collected during the winter 1935-36

NORTH DAKOTA WHITETAITS

Skin no.	Sex	Date collected	Dressed, natural long hair		Dressed, sheared, and dyed	Region torn during dressing
			Retained for later reference	Sent to toy manufacturers		
AN 28-----	Female-----	Dec. 20	×			
AN 33-----	Male-----	do-----		×		
AN 49-----	do-----	Jan. 29	×			
AN 51-----	do-----	do-----			×	
AN 54-----	Female-----	do-----			×	Middle of right side.
AN 55-----	Male-----	do-----			×	

NEBRASKA WHITETAITS

AX 10-----	Female-----	Dec. 21	×			Side of neck.
AX 12-----	do-----	do-----		×		
AX 16-----	do-----	Jan. 6	×			
AX 32-----	do-----	Feb. 1			×	
AX 33-----	Male-----	Dec. 21			×	
AX 35-----	do-----	Dec. 22			×	

NEBRASKA BLACKTAILS

BX 14-----	Female-----	Dec. 24			×	Side and neck. Halfway, side to side. Slightly midrump and left front leg. Two places, midback.
BX 18-----	do-----	Jan. 1	×			
BX 21-----	Male-----	Dec. 9			×	
BX 32-----	Female-----	Feb. 10			×	
BX 34-----	do-----	do-----	×			
BX 35-----	Male-----	Jan. 18		×		

None of the whitetail skins was considered usable in the fur trade in the natural condition in competition with skins of domestic rabbits, the source of practically all the natural long-hair rabbitskins. Some of these skins also were considered too heavy, since they could not be satisfactorily fleshed.

One dressed natural long-hair skin of each kind of jack rabbit was given to a manufacturer to make up into toys. He reported all quite satisfactory for this purpose. The quantity that might be consumed in this manner, however, is limited.

SKINS SHEARED AND DYED

Three dressed skins of each kind were sheared and dyed. This processing demonstrated thoroughly that all sheared and dyed jack rabbit skins are worthless for furriers' purposes. The blacktail skins were almost in shreds at the completion of the processing, and the fur was exceedingly flat and hairy. The whitetail skins had an uneven, matted, woolly appearance, quite similar to that of dyed sheepskins and the fur was wavy instead of being straight as in sheared Australian and domestic rabbits.

SKINS GRADED BY HATTERS' TRADE

After withdrawing the 18 rabbitskins from dressing, all others collected up to February 15 were taken to a prominent hat-fur cutting corporation for grading into No. 1 and No. 2 hatters' skins. All 86 whitetail skins, except 8 early taken North Dakota and 6 early taken

Nebraska skins, graded as No. 1. All 67 blacktail skins, both Nebraska and Oklahoma, also graded as No. 1, except 5 of the early fall skins. The value per pound in March 1936 of No. 1 skins was stated to be 52 cents for North Dakota whitetails, 48 cents for Nebraska whitetails (known in the trade as Colorados), and 45 cents for blacktails. No. 2 skins were considered to have approximately half the value of the No. 1's. The cottontail skins were rated as of little commercial value as hatters' fur and were not graded.

COOPERATIVE STUDY WITH HAT RESEARCH CORPORATION

All the skins collected throughout the entire period, except the 18 that were dressed, were sent to the Cavanagh Hat Research Corporation for further study under a cooperative arrangement. These skins had been marked individually, with the intention of getting information on the relative felting qualities of skins of females as compared with those of males and also of skins taken at various seasons of the year. This part of the experiment had to be abandoned, because equipment was not available for handling so small a number of experimental skins.

The efficient use of the regular equipment required approximately 100 pounds of fur, so as many of the experimental skins as possible were included in each group in order to simulate as nearly as possible the conditions under which other kinds of hatters' fur were handled. The wild-rabbit skins were therefore segregated into lots showing origin and species only.

COOPERATOR'S REPORT

The details of the fur-cutting and processing reports on these skins are given in tables 3 and 4. The cooperator stated:

The blowing loss was good or subaverage on the whitetails and the Nebraska blacktails and high on the others, part of these poor results being due to the small quantity of fur blown with machinery that normally handles 100 pounds at a time. The shrinkage was abnormally fast and this would account to some extent for the poor felt. This fast shrinkage is due in part to the open character of the fur on the pelts, which absorbed more carrot² than normally, for it must be borne in mind that late fall and winter skins were used together and that the fall skins have a sparse mat of fur. The carrot used is of low degree and should produce a rather slow-shrinking hat.

TABLE 3.—*Details of cutters' report on obtaining hatters' fur from wild-rabbit skins*

Kind and source of skins	Skins used	Skins per pound	Weight of skins				Weight of cut fur			Weight of fur pieces
			Raw	After opening and cleaning	After clipping	After carotting and brushing	For processing	Greasy	Total	
Whitetail:	<i>Number</i>	<i>Number</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
North Dakota.....	74	3.52	21.00	20.50	16.38	16.50	8.00	0.25	8.25	0.25
Nebraska.....	52	4.07	12.75	12.50	10.19	10.25	5.25	.25	5.50	.12
Blacktail:										
Nebraska.....	45	5.79	7.75	7.50	6.00	6.00	3.00	.12	3.12	.19
Oklahoma.....	63	5.66	11.12	10.75	9.00	8.75	4.00	.19	4.19	.19
Cottontail:										
North Dakota.....	56	9.33	6.00	5.00	4.00	3.75	2.00	-----	2.00	.12
Nebraska.....	55	10.22	5.38	4.50	3.50	3.25	1.62	-----	1.62	.19
Oklahoma.....	58	10.54	5.50	4.50	3.75	3.50	1.75	-----	1.75	.12

²A technical term for solution applied to fur to give it felting qualities.

TABLE 4.—*Details of report on wild-rabbit hatters' fur processed separately or blended with other furs*

Kind and source of skins	Weight of fur			Weight of fur at forming	Starting rounds ¹	Shrinking machines		Final height and width	Average weight at final size	Baumé reading of carrot
	Before blowing	After blowing	Loss in blowing			A	B			
Whitetail:	<i>Lb.</i>	<i>Lb.</i>	<i>Per cent</i>	<i>Oz.</i>	<i>No.</i>	<i>Min.</i>	<i>Min.</i>	<i>Inches</i>	<i>Oz.</i>	<i>Degrees</i>
North Dakota.....	8.00	7.00	12.50	3.75	6	10	22	9¾ by 14¾	3.43	8
Nebraska.....	5.25	4.56	13.14	3.75	6	10	22	do.....	3.39	8
Blacktail:										
Nebraska.....	3.00	2.62	12.67	3.75	4	9	11	do.....	3.45	7
Oklahoma.....	4.00	3.12	22.00	3.75	4	9	10	9½ by 14½	3.45	7
Cottontail:										
North Dakota.....	2.00	1.62	19.00	3.75	5	11	20	9¾ by 14¾	3.20	7
Nebraska.....	1.62	1.25	22.84	3.75	5	11	18	do.....	3.20	7
Oklahoma.....	1.75	1.38	21.14	3.75	5	11	18	do.....	3.22	7
Blended whitetail ¹					8	18	40			
Blended blacktail ²					6½	12	15			
Blended cottontail ^{2, 3}					8	15	32			
Usual conditions.....			15.00		6-8	12-15	20-30			

¹ A "starting round" is a prescribed series of manipulations in the process known as "starting". In general, 1 round consists of 1 dipping of the tip in water, followed by a rolling in the machine; then 2 side dips followed by rolling, and then a brim dip followed by a rolling. 8 rounds therefore would mean submitting the hats to this cycle of dips and rolling 8 times.

² Blended in the proportion of the rabbit fur specified, 40 percent; other hatters' fur, 60 percent.

³ Proportion 4 Oklahoma, 6 Nebraska, 10 North Dakota.

REPORT ON SAMPLE HATS MADE

In order to get such desirable properties as fineness, strength, and feel, most hats are made of a blend of numerous kinds of fur in various proportions. Sample hats in this cooperative research were made containing 100 percent of each of the three kinds of wild-rabbit fur and the following report thereon was made:

Bearing the usual blending in mind, it is our opinion that on the whole the tests were most satisfactory. The fact that the fur, even from the cottontails, made a hat that held together is in itself significant and shows that American rabbit fur can be used to make hats.

The fur from the cottontail skins when used by itself made a grainy felt, the poorest of the several lots. Though there was little choice in the quality of felt made from skins taken in the three States of the Midwest, they ranked as follows: (1) Nebraska, (2) Oklahoma, and (3) North Dakota.

The fur from the blacktail skins made a "very passable hat with good color and fair felt." Of these, the fur from the Oklahoma skins made a felt that seemed a "trifle better" than that from the Nebraska skins. The sex distribution shows an equal number of skins from males and females in the Oklahoma assortment and a proportion of three males to two females in the Nebraska lot. The finer quality of fur usually associated with skins of females may be responsible for this difference.

The white-tailed jack rabbit fur made the "best hats of all, having good color and felt." The hat from the Nebraska fur was "somewhat better" than that from North Dakota.

The hats were all somewhat thicker and heavier in felt than that demanded by the American trade, but it is the opinion of the cooperators that it should be satisfactory for the present foreign demand.

Sample hats were made also from various blends of furs in which the cottontail, blacktail, and whitetail fur each constituted 40 percent of the total used. No direct comparison of relative values can be made in this respect, since the 60 percent of other hatters' fur used differed in each blend. It was thoroughly demonstrated, however, that an excellent hat can be made when 40 percent of the wild-rabbit fur from this country is included in the blend (table 4).

CONCLUSION

The foregoing study has revealed the possibilities of greater utilization of western wild-rabbit skins by hat manufacturers. As jack rabbits of the Midwest and the far West are likely to be considered a pest, any returns from the sale of skins will offset part at least of the expense of control. The price received will be the primary incentive for collecting the skins. This, however, will be largely determined by competing prices of the Australian rabbitskins and of those of the hutch-raised rabbits produced primarily for meat in this and other countries.

At present the only outlet for wild-rabbit skins collected in the United States seems to be through the hatters' trade. They are not at all suitable for furriers' purposes. On the other hand, the better grade of skins from hutch-raised rabbits find their way into the fur trade because of their superior quality and the higher prices they command there.

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